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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/960,064
Filing Date: September 21, 2001
Appellant(s): ROELOFS, GREGORY ROBERT

Robert M. McDermott
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 05/12/2004.

(1)   Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2)   Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly

affect or be directly affected by or have a bearing on the decision in the pending appeal

is contained in the brief.

(3)   Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4)   Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection

contained in the brief is correct.

No amendment after final has been filed.

(5)   Summary of Invention

The summary of invention contained in the brief is correct.

(6)   Issues

The appellant's statement of the issues in the brief is correct.

(7)   Grouping of Claims

Appellant's brief includes a statement that claims 1-18 do not stand or fall

together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8). Appellant

has made four groups of claims where claims 1-3 and 10-12 stand or fall together,

claims 4-6, 9, 13-15 and 18 stand or fall together, claims 7 and 16 stand or fall together

and claims 8 and 17 stand or fall together.

(8) ***Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) ***Prior Art of Record***

5,684,510   Brassell   11-1997

(10) ***Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-18 rejected under 35 U.S.C. 102(b). This rejection is set forth in a prior

Office Action, mailed on 01/16/2004, in paragraph 3 spanning pages 4-7. This rejection

is reproduced below for the Board's convenience.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Brassell

et al. U.S. Patent No. 5,684,510. Brassell describes a system that grid fits glyphs onto

pixels in accordance with values P, J and K and pixel coverage values which values

force the glyph to one position or another position during grid fitting. Thus, Brassell

teaches modeling forces to be exerted onto the glyph in order to move the glyph to an

integer pixel position.

A detailed analysis of the claims follows.

Claim 1	Brassell et al. U.S. Patent No. 5,684,510
1. A rendering system comprising:	See figures 6-8.
a force modeler that is configured to model forces that are applied to a glyph in dependence upon a placement of the glyph, and	See figures 6-8 and column 17 line to column 18 line 6. The values of P, J and K and pixel coverage values are forces that are applied to a glyph in dependence upon the placement of the glyph because they are used when the glyph does not lie wholly on pixels but lies on partial pixels. The term force is a broad term as shown by the above yourdictionay.com definition.
a glyph positioner, operably coupled to the force modeler, that is configured to select a preferred placement of the glyph, based on the forces that are applied to the glyph at the preferred placement.	The glyph at figure 7 is modified based upon the force values derived from P, J, and K and the location of the glyph on the pixel grid to produce the glyph shown in figure 8. Column 4 lines 13-20 describes grid fitting. Since the claim does not define how a force is exerted onto the glyph, the glyph is merely positioned with regards to the determined force, then Brassells' moving a glyph to a position with regards to a determined value meets the claim.

Claim 2:

Step 72 scales the glyph and provides the glyph to the glyph positioner, based on a glyph description from step 71.

Claim 3:

See column 11 lines 27-30 where display 16 and printer 17 are described. Display 16 and printer 17 will render the glyph at the preferred placement determined by the algorithm of figure 6.

Claim 4:

See figures 6-8, steps 75, 78 and 79 determines the "force" to be applied to the glyph to move the glyph to an integer position, see column 17 lines 20-23 and column 12 lines 56-65, inherently the amount of coverage determines the amount of movement of the glyph from the glyph's location illustrated in figure 7 to its location in figure 8.

Claim 5:

Figure 7 illustrates the set of pixels comprises pixels that are partially covered by the glyph.

Claim 6:

In step 78 the grid fitting takes into account the preferred spacing of the glyph relative to an adjacent glyph, thus, the force to be applied to the glyph is a function of the spacing of the glyphs.

Claim 7:

As stated above for claim 6 the preferred spacing of the glyph relative to an adjacent glyph, thus, the force to be applied to the glyph is a function of the spacing of the glyphs.

Claim 8:

The grid fitting uses at least a linear model.

Claim 9:

Figure 7 illustrates a glyph's coverage over pixels, based upon the coverage the glyph is moved to cover whole pixels, thus, based on a coverage of one

or more pixels by the glyph the "force" applied to move the glyph is determined so as to effect a change of the coverage of the one or more pixels by the glyph.

Claim 10 is a method version of apparatus claim 1 which claims the same function claimed in claim 1 and is rejected for the reasons given for claim 1.

Claim 11 is a method version of apparatus claim 2 which claims the same function claimed in claim 2 and is rejected for the reasons given for claim 2.

Claim 12 is a method version of apparatus claim 3 which claims the same function claimed in claim 3 and is rejected for the reasons given for claim 3.

Claim 13 is a method version of apparatus claim 4 which claims the same function claimed in claim 4 and is rejected for the reasons given for claim 4.

Claim 14 is a method version of apparatus claim 5 which claims the same function claimed in claim 5 and is rejected for the reasons given for claim 5.

Claim 15 is a method version of apparatus claim 6 which claims the same function claimed in claim 6 and is rejected for the reasons given for claim 6.

Claim 16 is a method version of apparatus claim 7 which claims the same function claimed in claim 7 and is rejected for the reasons given for claim 7.

Claim 17 is a method version of apparatus claim 8 which claims the same function claimed in claim 8 and is rejected for the reasons given for claim 8.

Claim 18 is a method version of apparatus claim 9 which claims the same function claimed in claim 9 and is rejected for the reasons given for claim 9.

(11) ***Response to Argument***

On page 5 of the Brief appellant gives reasons:

why claims 7and 16 stand or fall together and why they stand apart from claims

4-6, 9, 13-15 and 18, the reason given is agreed with;

why claims 8 and 17 stand or fall together, the reason given is agreed with and;

why claims 1-3 and 10-12 stand or fall together, the reason given is agreed with.

On page 5 at line 22 appellant incorrectly states claims 2-8 depends upon claim

1, appellant should have written claims 2-9 depend upon claim 1.

On page 6 first full paragraph appellant argues "Brassell is silent with regard to

modeling forces applied to a glyph based on its placement and is silent with regard to

placing glyphs based on such forces". As stated in the final rejection the term force is a

broad term and is met by Brassells' forcing of the glyph to integer raster locations.

Column 6 lines 46-50 and 54-59 and column 7 lines 9-28 describes grid fitting the glyph

onto the raster of pixels. Brassells' figure 7 shows the glyph before grid fitting and

figure 8 shows the glyph after grid fitting, column 20 lines 24-30. Brassell meets

appellant's argument by forcing the glyph to integer positions on the raster. Definition 7

given by yourdictionary.com states force is a vector quantity and definition 2 states force

is exertion. Definition 1 states force causes physical change. Changing the position of

Brassells' glyph is a physical change. Moving Brassells' glyph is exertion. Determining

the direction and distance to move Brassells' glyph is a vector quantity.

Force *n.*

   1.   The capacity to do work or cause physical change; energy, strength, or active power: *the force of an explosion.*

   2.

        a.   Power made operative against resistance; exertion: *use force in driving a nail.*

  b. The use of physical power or violence to compel or restrain: *a confession obtained by force.*

3.

  a. Intellectual power or vigor, especially as conveyed in writing or speech.

  b. Moral strength.

  c. A capacity for affecting the mind or behavior; efficacy: *the force of logical argumentation.*

  d. One that possesses such capacity: *the forces of evil.*

4.

  a. A body of persons or other resources organized or available for a certain purpose: *a large labor force.*

  b. A person or group capable of influential action: *a retired senator who is still a force in national politics.*

5.

  a. Military strength.

  b. The entire military strength, as of a nation. Often used in the plural.

  c. A unit of a nation's military personnel, especially one deployed into combat: *Our forces have at last engaged the enemy.*

6. *Law* Legal validity.

7. *Physics* A vector quantity that tends to produce an acceleration of a body in the direction of its application.

8. Baseball A force play.

Also note the attached copy of the definition of the word force found at pages

522-523 in The American Heritage® Dictionary, Second College Edition, 1982.

Note the definitions

Force n

1.Capacity to do work or cause change.

This definition states force causes change. Changing the position of Brassells' glyph causes change.

Also note the attached copy of the definition of the word force found at page 482

in Webster's Ninth New Collegiate Dictionary, Second College Edition, 1984.

Note the definitions

¹force n

1 a: strength or energy exerted or brought to bear : cause of motion or change:

This definition states force causes change. Changing the position of Brassells'

glyph causes change. The definition also states force causes motion. Changing the

position of Brassells' glyph causes motion to have occurred.

Applicants broad claim language claims causing a change in the glyph's position

by moving the glyph in a certain direction because the word force means to cause

change or motion. Since the claim does not define how the force is calculated and does

not define how a force is exerted onto the glyph, the glyph's position is merely changed

with regards to the determined force which is merely a value that indicates change, then

a prior art reference changing the position of a glyph by moving the glyph to a position

with regards to a determined value meets the claim since the prior art reference

determined values which indicated change. Moving the glyph causes a change in the

position of the glyph. Determining the direction and distance to move the glyph is

"modeling forces" that affect the glyph when the glyph is at its current position.

Brassell determines the direction to move the glyph and changes the position of

the glyph by moving the glyph in accordance with grid fitting. Column 4 lines 13-20

describes grid fitting by using hinting. Broadly one could state Brassells' grid fitting

models forces which are applied to the glyphs forming the character in order to change

the position of the glyphs.

In the Appeal Brief on page 6 first full paragraph appellant further argues "Brassell fails to teach either of the above limitations a) or b) of the Applicant's independent claims". Since claims 1-3 and 10-12 stand or fall together then method claim 10 will be analyzed since it is broader than system claim 1. Brassell teaches claim 10 because Brassell teaches a method of rendering a glyph to an array of pixels (*The background of the invention discusses rendering fonts on pixel oriented display devices.*), the method comprising: modeling forces (*The term forces is broadly claimed and is met by modeling the direction and distance to move the glyph.*) that are applied to the glyph (*The modeled direction and distance of movement is applied to the glyph to move the glyph.*) in dependence upon a placement of the glyph (*The direction of movement is determined by the coverage of the glyph on pixels as well as values P, J and K. Values P, J and K determine if grid fitting is to be implemented and pixel coverage determines which direction to move the glyph.*), and selecting a preferred placement of the glyph (*The initial coverage of the glyph on the pixel grid determines the preferred placement of the glyph.*), based on the forces that are applied to the glyph at the preferred placement (*The coverage of the pixels by the glyph at the preferred placement selects the preferred placement since at the preferred placement the coverage is such that movement of the glyph is unnecessary. In other words when the glyph is at the preferred*

placement, Brassells' system will model values that will not

move the glyph).

In the Appeal Brief on the remainder of page 6 appellant gives definitions to Brassells' P, J, K and pixel coverage. Appellant correctly states parameter P is the height of the glyph. Appellant incorrectly defines parameter J. Parameter J is defined at column 18 lines 61-67 as a value that indicates the space available within the cm square (ie the character space) to render alphabetic characters and at column 11 lines 39-43 the values of J and K are specified for a range of vertical pixels spanning the vertical portion of a character space during the rendering process. Appellant correctly states parameter K determines whether bilevel or grayscale display will be used. Selection of bilevel display causes grid fitting to occur by causing a change in position of the glyph by moving the glyph to integer pixel positions, see step 79. Grid fitting may also occur in the graylevel display, see step 79. The values P, J and K are values used to make decisions about how to render the glyphs, column 16 lines 14-17. Figure 6 illustrates the decision being made by Brassells' model. Steps 78, 79, 90, 91 and 92 occur when P, J and K meet certain criteria that use bilevel display to render the glyphs, see column 18 lines 8-39. Steps 78, 79, 82-87 occur when P, J and K meet certain criteria that use graylevel display to render the glyphs. Appellant's definition concerning pixel coverage is misleading since at column 10 lines 30-53 the coverage of the glyph is used to move the glyph to whole pixel locations for bilevel displays, see figure 2 where the outline of the glyph stroke 37 is moved to line 38. Appellants pixel coverage argument is directed solely to graylevel display without consideration of Brassells

application of pixel coverage to bilevel displays. Thus, Brassell uses the values of P, J, and K and pixel coverage values when certain conditions are met to move the glyph to whole pixel location on the bilevel display.

Appellants specification at page 5 line 26 to page 6 line 7 describes within glyph forces that are based on the pixels that are partially covered by the glyph. The type of force is not described. Therefore when the claims do not claim the type of force then the claims are open ended. In other words they claim any disclosed force, equivalent forces, and any model consistent with the dictionary definition of the term force that are based on pixel coverage. Appellants specification at page 6 lines 30-31 states "force F 350 is dependent upon the area of the pixel that the glyph covers" and the specification at page 8 lines 13-15 describes the forces caused by each pixel on the glyph is computed and this total force is used to move the glyph. Appellants specification describes at page 6 line 19-26 a force spring model, at page 7 line 2 a gravity well model, and at page 7 lines 6-7 "any of a variety of other mechanical analogies may be used to derive an appropriate force generation model". Therefore in view of appellant's specification when the claims do not claim a specific force model then any model that uses a mechanical analogy will be covered by the claim. Applicants specification does not define what a mechanical analogy is but it would definitely include analyzing the location of a glyph and analyzing the coverage of a pixel or pixels by a glyph in order to move the glyph by a mechanical analogy. Note the attached copy of the definition of the words mechanic, mechanical, mechanics and mechanism found at pages 736 and 737 in The American Heritage® Dictionary, Second College Edition. Also note the attached copy of the

definition of the words mechanical, mechanics and mechanism found at pages 776-780

in Webster's Ninth New Collegiate Dictionary, Second College Edition. In Brassell the area of the pixel the glyph

covers determines the direction of movement of the glyph. Refer to figure 7 where the

character m is illustrated on a pixel grid. Glyph 110 is located on two columns of pixels,

columns 6 and 7, note how column 6 is covered less than column 7. The process of

figure 6 causes grid fitting to occur where the glyph 110 has been moved to glyph 110'.

The pixels of column 6 had less influence on the location of the glyph 110 since they

had less area covered by the glyph 110 than the pixels of column 7 so the glyph was

moved right to fully cover the pixels in column 7 as shown by glyph 110' in figure 8.

Thus, by a mechanical analogy the pixels of column 7 attracted glyph 110 more than the

pixels on column 6 attracted glyph 110 or by another mechanical analogy the pixels of

column 7 repulsed glyph 110 less than the pixels on column 6 repulsed glyph 110.

In the Appeal Brief on page 7 first paragraph appellant argues the Examiner did

not note where the definitions given by the Examiner for the word force apply to

Brassell's teachings. In the Appeal Brief on page 7 second paragraph through page 8

second paragraph appellant argues Brassell uses conventional hinting and argues

conventional hinting does not model forces. The claimed term force is a broad term

which from dictionary definitions means to cause change or to cause motion or

movement of an object. In appellant's system a force is determined to move the glyph

until no more force exists to move the glyph. In Brassells' system parameters P, J and

K are analyzed as well as the coverage of the glyph on the pixel grid to determine if the

glyph needs to be moved and which way to move the glyph. The portion of Brassells'

system that analyzes parameter P, J and K is performing the method of modeling

forces, forces by dictionary definition and in view of applicant's specification are values

which cause change or motion, that are applied to the glyph in dependence upon a

placement of the glyph, parameters P, J and K and pixel coverage determine the

current placement of the glyph, the determined placement of the glyph causes values to

be computed which indicate whether to move a glyph and indicates where to move the

glyph. Steps 66, 67, 75, and 79 illustrated in Brassells' figure 6 shows modeling of

values which indicates the placement of the glyph on the pixel grid. Steps 78, 82 and

90, also illustrated in Brassells' figure 6, are steps that select the placement of the glyph

in response to the previously calculated values.

In the Appeal Brief on page 8 concerning claims 4-6, 9, 13-15 and 18 appellant

argues Brassell is silent with regard to determining the forces that are applied to the

glyph based on an amount of coverage of a set of pixels. Since this group stands or

falls together, the broadest claim, method claim 13, should be considered and will now

be addressed. Brassell teaches determining the forces that are applied to the glyph

based on an amount of coverage of a set of pixels because as discussed for method

claim 10 the determined forces are values which cause the glyph covering a set of

pixels, see Brassells' figures 2, 7 and 8, to have its position changed in order to better

cover whole pixels. Appellant also argues Brassell determines the luminance of the

pixel and does not determine a force that is applied to the glyph. Determining the

luminance is one aspect of Brassell's method which also includes changing the position

of the glyph on a bilevel display as well as on a grayscale display. Changing the

position of the glyph on the pixel grid of the display was discussed above for method

claim 10 as being caused by the determining of a force to be applied to the glyph by

determining values which cause the position of the glyph to be changed.

In the Appeal Brief on page 8 concerning claims 7 and 16 appellant argues

Brassell is silent with regard to determining the forces that are applied to the glyph

based on a preferred spacing relative to an adjacent glyph. Since this group stands or

falls together, the broadest claim, method claim 16, should be considered and will now

be addressed. Brassell teaches determining the forces that are applied to the glyph

based on a preferred spacing relative to an adjacent glyph because as discussed for

method claim 10 the determined forces are values which cause the glyph covering a set

of pixels, see Brassells' figures 2, 7 and 8, to have its position changed in order to better

cover whole pixels and in step 78 grid fitting takes into account the preferred spacing of

the glyph relative to an adjacent glyph since the spacing of two pixels illustrated in figure

7 between glyph 112 and glyph 110 is maintained after grid fitting has generated glyphs

112' and 110' with two pixel spacing illustrated in figure 8, thus, the values calculated to

cause the glyphs to move or change position is a function of the spacing between

glyphs.

In the Appeal Brief on page 8 concerning claims 8 and 17 appellant argues

Brassell is silent with regard to modeling forces that are applied to the glyph, and

thereby silent with regard to such modeling based on linear, force-density, spring or

gravity well models. Since this group stands or falls together, the broadest claim,

method claim 17, should be considered and will now be addressed. Brassell teaches

modeling forces that are applied to the glyph as discussed above for method claim 10.

Also the model used by Brassell is at least a linear model because the equations used

in steps 75, 78 and 79 are linear equations. Grid fitting is a linear model because it is

based upon the coverage of the glyph on the pixel, a greater area covered by the glyph

causes a greater force to move the glyph to completely cover the pixel. See column 10

lines 35-53 which teaches based upon the hinting instructions determining if the area of

coverage of the glyph on pixel (1,3) is sufficient to warrant moving the glyph to include

pixel (1,3). On a low resolution device the glyph on pixel (1,3) covers more of this pixel

than it would on a high resolution device. Brassell does not appear to teach the force-

density, spring or gravity well models of this claim, but, due to the alternative language a

reference that teaches one of the claimed modeling forces causes the claim to be

rejected by that reference until that particular force model is deleted from the claim.

In summary the claims do not claim a specific force model, thus, the modeling of

forces is to be given the broadest reasonable meaning. Brassell analyzes the

placement of the glyphs on the pixel grid in order to determine changes in position of

the glyph that is needed. Appellants claims analyzes the placement of the glyphs in

order to determine needed changes in the positions of the glyphs. Appellants claims

use the word force but they do not claim a specific type of force. Force by its dictionary

definition and in light of the specification is meant to be any analogous mechanical

analogy that causes change or motion or movement of the glyph. Moving the glyph

based upon pixel coverage by the values P, J, and K and the grid fitting hinting values is

an analogous mechanical analogy since the coverage of the glyph on the pixel
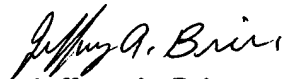
determines whether the glyph is moved, see figures 2-3B, since the coverage of the glyph on a set of pixels determines whether the glyph is moved, see glyph 110 in figures 7 and 8, and since the coverage of adjacent glyphs on the pixel grid determines how the glyphs are moved relative to each other, see glyphs 110, 112 of figure 7 and glyph 110', 112' of figure 8.

On June 3, 2004 Examiner Jeffery A Brier contacted Robert McDermott concerning adding the force-density, spring and gravity well model limitations to the independent claims in order to overcome the rejection. He needed to contact the client before making a decision. On June 10, 2004 Mr. McDermott left a voice message stating applicant was not willing to limit the claims to those force models and he felt applicant was entitled to broader coverage.

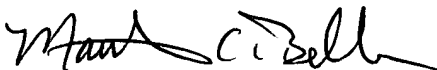For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jeffery A. Brier

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Primary Patent Examiner
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June 30, 2004

Conferees
SPE Michael Razavi
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